ROLE OF NTFP'S IN POVERTY ALLEVIATION IN TEMPERATE FOREST OF KAGHAN VALLEY, KPK PAKISTAN

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ABSTRACT

The present study revealed that socioeconomic significance of NTFPs can be associated with the total forest cover in Pakistan, which is 5% and 80% of the livelihoods of those living in extreme poverty depend directly on forest resources. About 34% of the local population relies on NTFPs for income. Valued NTFP's in Kaghan valley are typically associated with the sub valleys and water bodies that join the Kunhar River**.** The fieldwork for data collection was conducted in the Kaghan Valley with the assistance of Forest Department Kaghan. A questionnaire was developed for local NTFP's collectors/producers and traders. Non-random sampling technique was used for analyzing the area in term of NTFP's. Purposive sampling techniques were used to interview the targeted groups. . A total of 120 respondents were interviewed at various places for one week during the month of July 2021 and data collected was recorded in a pre-tested questionnaire. A focus group discussion with the Forest officials and local experts was also done to collect data about the available NTFP's in the study area. Results were then analyzed from the data collected showing data and results related their socio-economic data, family members involved in NTFP's, purpose of collection, NTFP's harvesting practices, estimated annual income through NTFP's sale, causes of depletion of NTFP's, traders in the local villages, status of NTFP's sale over the past 10 years, most traded NTFP's in the study area their collection method and selling price, any facilitation or limitations by government, problems related NTFP's and their solution

further increase in income through NTFP's. The findings presented that NTFP's play a significant part in reducing the severity of poverty in the Kaghan Valley. Some of the problems like shortage of staff, high duty tax, lack of scientific knowledge related to storage and processing of NTFP's were faced by the locals which needed to be resolved in order to further increase the economic growth, improve livelihood and reduce poverty.

KEY WORDS

Poverty Alleviation, Temperate, NTFP's, Socioeconomic, Kaghan Valley

INTRODUCTION

NTFP's refers to all biological materials derived from the forest for human use other than timber. Wild mushroom, medicinal plant, honey, silk cocoons, pine nut (Pinus gerardiana), and other valued products are among the most significant NTFP's in Kalash Valley Bomburet (Ahmed, 2007). It is generally agreed that NTFP's are essential for the preservation and maintenance of rural ways of life, the reduction of rural poverty, the protection of biodiversity, and the advancement of rural economic growth (Maske *et al.*, 2011). The yearly value of international commerce in NTFP's is projected to be USD 11 billion (Ahenkan and Boon, 2010). A "green social security" is provided by these items to billions of people in the form of affordable building materials, money, fuel, dietary supplements, and conventional medications. People become more dependent on NTFP resources with commercial interest when NTFP earnings are their only source of income in specific circumstances (Marshall, Newton and Schreckenberg, 2003). NTFP's have social and economic value, especially for mountainous people in developing countries who depend on them for livelihood and poverty alleviation (Shackleton and Pullanikkatil, 2019)(Pakhtunkhwa, 2023). The vast majority of NTFPs are ineffective tools for alleviating poverty, although certain ones play a significant role in preventing poverty (Angelsen and Wunder, 2003).

About 80% of the world's population currently relies on traditional medicine for their main healthcare requirements, according to the World Health Organization (WHO). For the collecting, processing, packaging, drying, marketing, and consumption of diverse NTFPs, locals rely on their traditional expertise (Shinwari and Gilani, 2003; Shinwari, 2010). (Islam

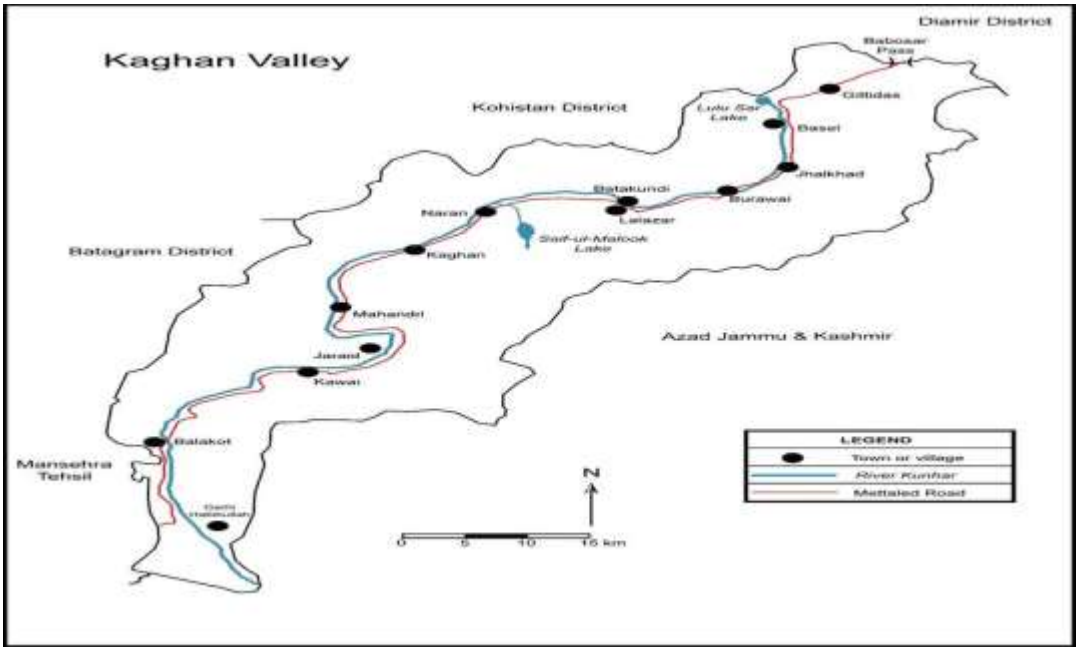
and Quli, 2017)evaluated the significance of NTFP's to the economy of the Bundu tribal community located in the Ranchi area of Jharkhand in India. (Ros-Tonen and Wiersum, 2005) stated that NTFP's commercialization and conservation-development (Pakhtunkhwa, 2023) ties must be reconsidered. (Mulenga, Richardson and Tembo, 2012)studied the role that NTFP's play in the welfare of rural households as well as characteristics of rural households that depend on NTFP's for their means of subsistence and income. (Zubair, Ansari and Hussain, 2020)studied the extraction and processing of non-timber forest products, particularly medicinal plants, in Azad Jammu and Kashmir, Pakistan. (Latif *et al.*, 2006) studied that for alternative sources of income, forest-adjacent communities harvest NTFP's. (Solomon, 2016) stated that NTFP's are all the biological resources originated from animals and plants, gathered from the natural forests, wooded land, artificial plantations, farmlands, and trees outside of forests or those that have been domesticated.

MATERIAL AND METHODOLOGY

DESCRIPTION OF STUDY AREA

The Reserved Forests in the Kaghan valley have a total area of 1, 864, 44 hectares. On either side of the river Kunhar, at varied distances from Balakot, the woodlands are located 92 kilometers away. The region lies between latitudes 34° 28' and 34° 56' north and longitudes 73° 20' and 73° 41' east. The territory of Azad Jammu and Kashmir can be found on the east and south sides of the tract, while the Chilas and Gilgit agency can be found on the north side, and Allai Kohistan and Siran Forest Division can be found on the western side.

Fig No. 01: Showing Map of Study Area Kaghan Valley



METHODOLOGY

The fieldwork for data collection was conducted in the Kaghan Valley with the assistance of Forest Department Kaghan. A questionnaire was developed for local NTFP's collectors/producers and traders. Non-random sampling technique was used for analyzing the area in term of NTFP's. Purposive sampling techniques were used to interview the targeted groups. A total of 120 respondents were interviewed at various places for one week during the month of July 2021 and

data collected was recorded in a pre-tested questionnaire. A preparatory survey was carried out at Balakot in Kaghan valley in the beginning in order to find out whether or not the questionnaire required any modifications. Any changes that were found to be necessary as a result of this pre-test were recorded and carried out the following day of research.

DATA COLLECTION

Data on NTFPs were collected through well-structured interviews and questionnaire which was designed keeping in view the objectives of the study. Questionnaire was divided into two parts, part first included personal information such as name, locality, age, education, profession and household size and no. of family member involved in NTFPs collection and trading . Part second included parameters such as NTFP type, species name, plant part, uses, seasonality, usage, collection, sale rate, and income earned. Monetary values of NTFPs were calculated as per their local market rates. Any limitation or facilitation by Government and problems faced by the local people during NTFPs collection/trading and how these problems can be solved were also observed. In Kaghan Valley, a total of 120 male respondents provided information for questionnaires.

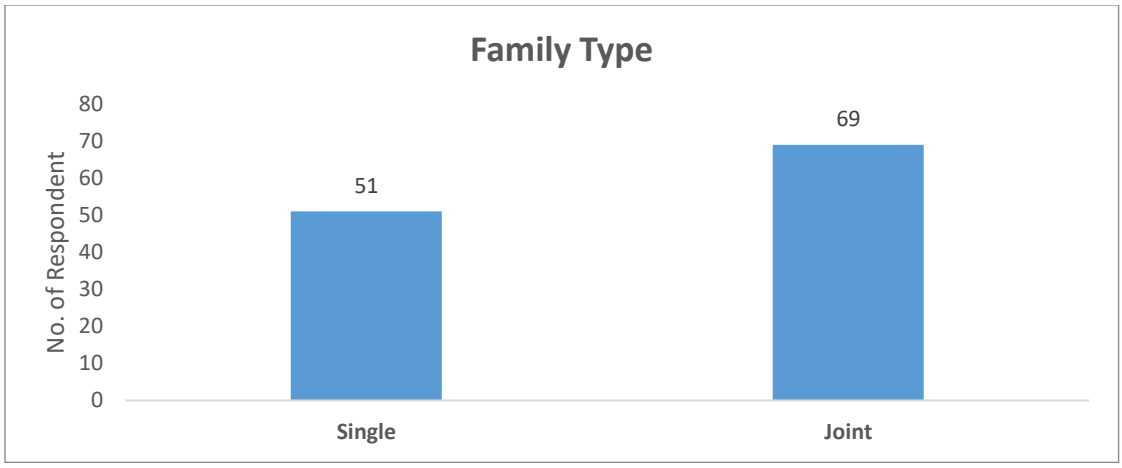
DATA ANALYSIS

Data collected from the study area was then compiled and converted to excel sheets for Simple descriptive statistical analysis viz., frequency (f), percentage (%), mean (x) and pertinent suggestions and recommendations were formulated based upon the results.

RESULTS AND DISCUSSION

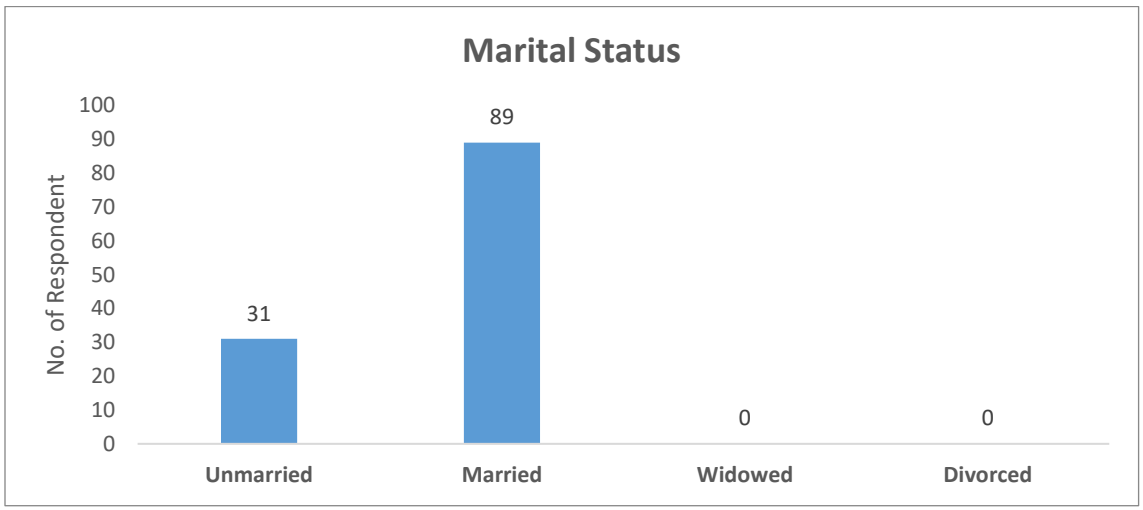
The number of respondents who belonged to the single family type was 51 (42.5%), and the number of respondents who belonged to the joint family type was 69 (57.5%).

Fig No. 02: Showing Family Types of Kaghan Valley



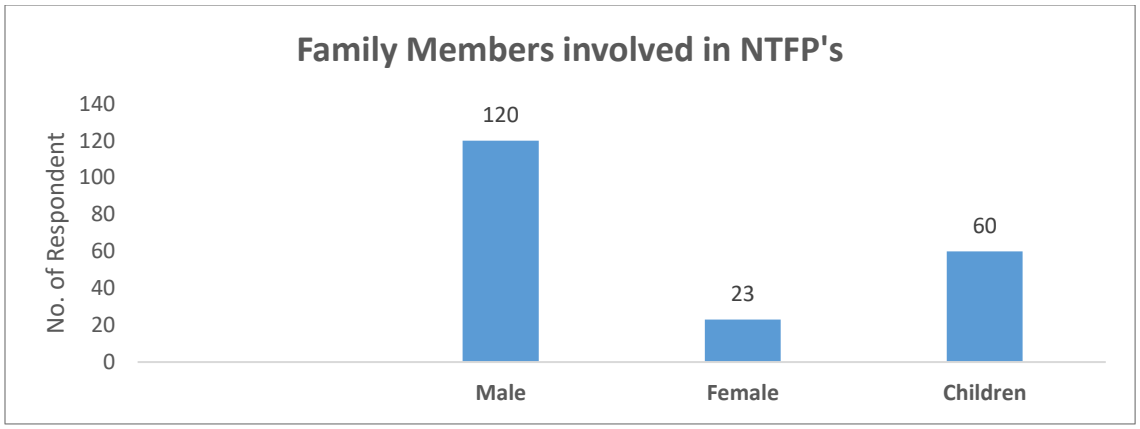
A total of 31 respondents who belonged to the single marital status (25%), 89 respondents who were married (74%), and zero respondents who were either divorced or widowed which accounts for (0%) of the total.

Fig No. 03: Showing Marital Status of Kaghan Valley



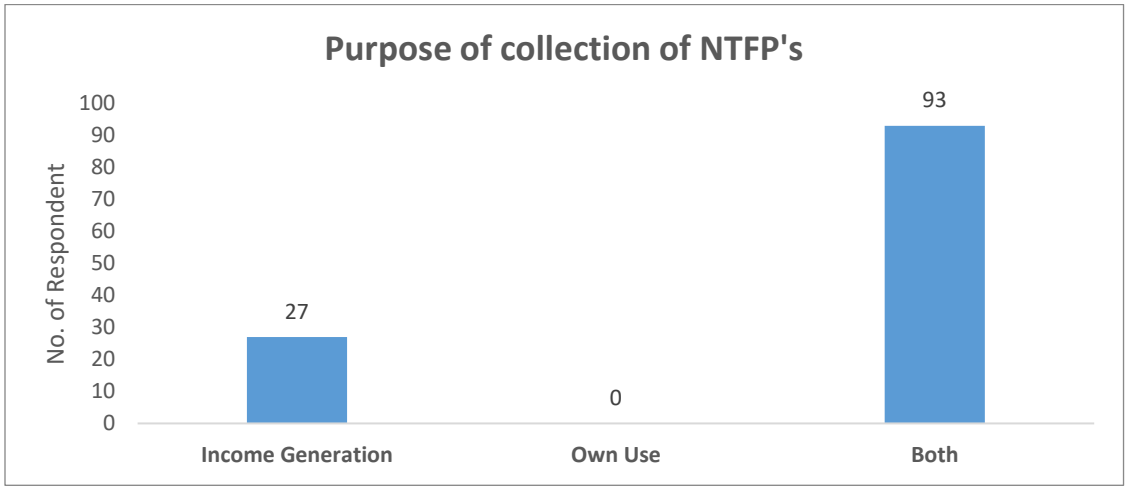
The number of male family members involved in NTFP's was found to be 120, the number of female family members involved in NTFPs was found to be 23, and the number of children involved was found to be 60.

Fig No. 04: Showing No. of Family Members involved in NTFP's collection and sale in Kaghan Valley



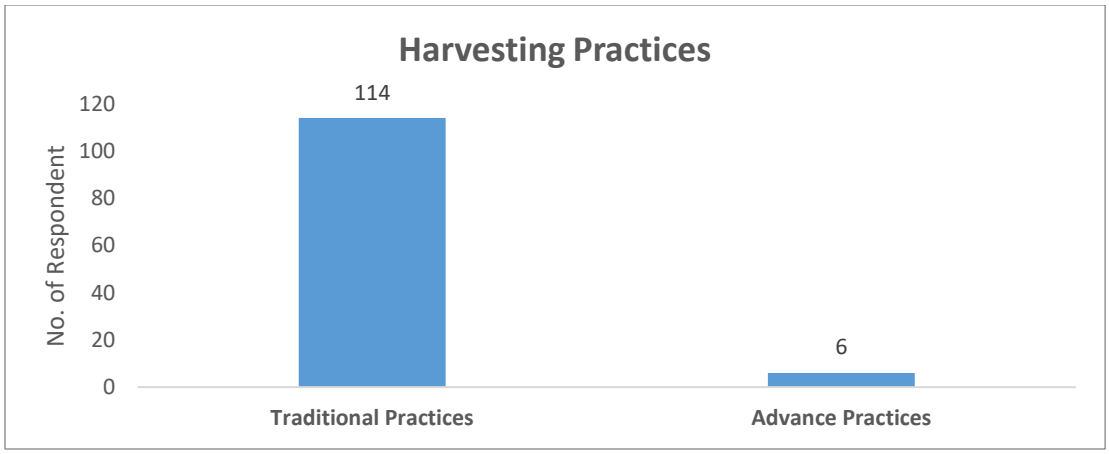
Among the total of 120 respondents, 27 (22.5%) respondents collected NTFPs for the purpose of generating income, and 93 (77.5%) people collected NTFP's for both their own use and for the purpose of generating income.

Fig No. 05: Showing purpose of collection of NTFP's in Kaghan Valley



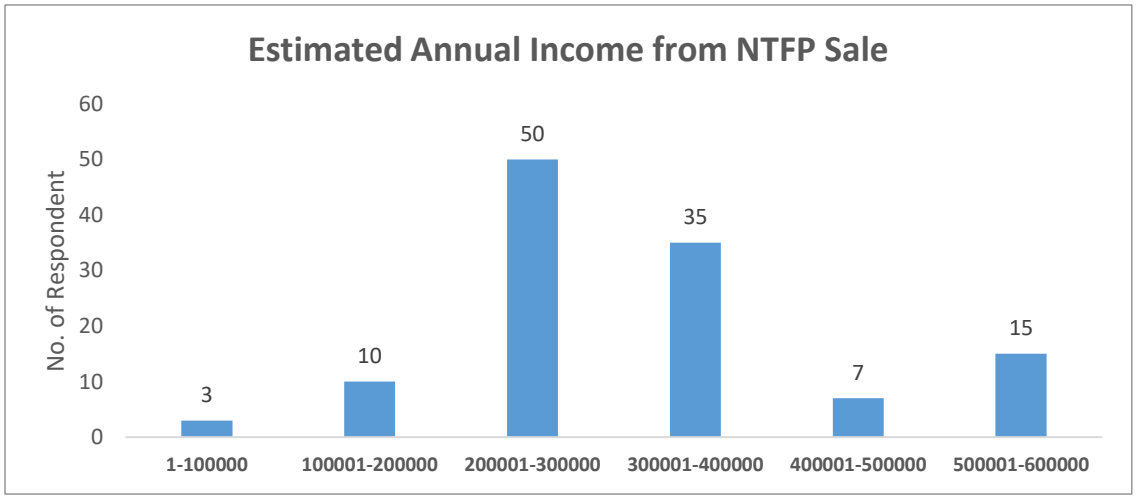
Only 6(5%) of the total of 120 respondents were trained and employed advanced harvesting practices for the collection of NTFP's While 114 (95%) of the total respondents used traditional harvesting procedures for the collection of NTFP's.

Fig No. 06: Showing Harvesting Practices used for harvesting NTFP's in Kaghan Valley



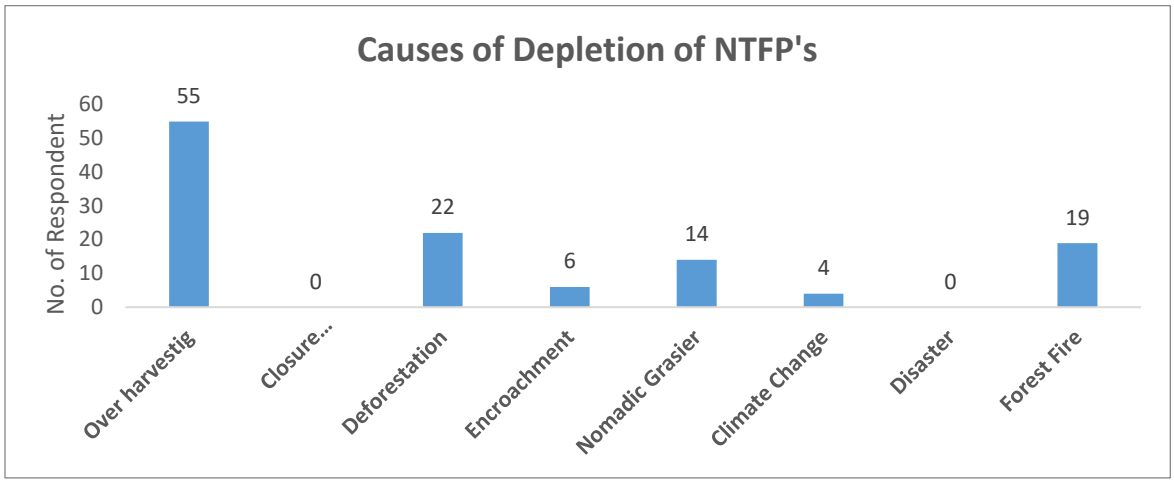
For study convenience the annual income was divided into 6 groups 3(2.50%) belonged to class one, 10(8.33%) belonged to the second class, 50(41.67%) belonged to the third, 35(29.17%) belonged to the fourth class, 7(5.83%) belonged to the fifth class and 15(12.50%) belonged to the sixth income class as shown below.

Fig No. 07: Showing Estimated Annual Income from the Sale of NTFP's in Kaghan Valley



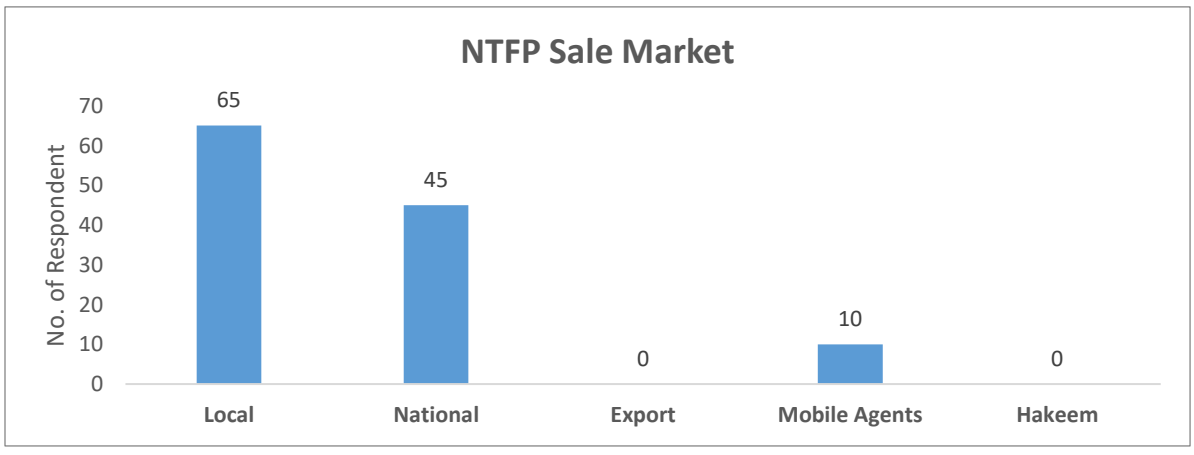
Overharvesting was mentioned as the primary reason for the depletion of NTFP's as the primary reason for the depletion of NTFP's was mentioned by 55 (45.83%) number of respondents, followed by 22 (18.33%) deforestation, 19 (15.83%) forest fire, 14 (11.67%) nomadic grazers, 6 (5%), encroachment, and 4 (3.33%) climate change.

Fig No. 08: Showing Main Causes of Depletion NTFP's in Kaghan Valley



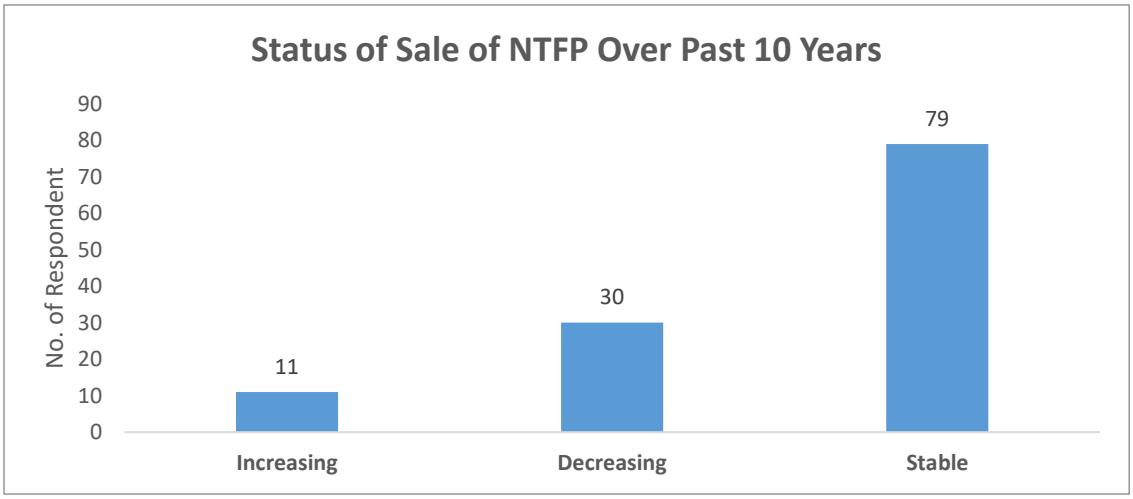
According to the data collected from the 120 total respondents, 65 respondents (54.17%) sold NTFP's at local markets, 45 respondents (37.50%) sold NTFP's at national markets , and 10 respondents (8.33%) sold NTFP's to mobile agents. NTFP's collected from the forests of Kaghan Valley are either sold at the local market of Balakot or are transported all the way to Akbari Mandi, Lahore through various marketing channels.

Fig No. 09: Showing Main NTFP's Sale Market for selling of NTFP's



Out of a total of 120 respondents, exactly 79 (65.83%) stated that the status of NTFP's sales over the past 10 years is stable, 30 (25%) indicated that sales of NTFP's have declined, and 11 (9.17%) claimed that sales of NTFP's have increased.

Fig No. 10: Showing Status of Sale of NTFP's over the past 10 years in Kaghan Valley.



According to the findings, the most common NTFP's exchanged by locals was mushk e bala (18.33%), followed by banafsha (10%), kakri (10%), walnut (9.17%), raisha khatmi (8.33%), and banafsha (7.50%). The following figure provides a graphical representation of the data regarding the most often traded NTFPs in Kaghan Valley.

Fig No. 11: Showing Most Traded NTFP's of Kaghan Valley

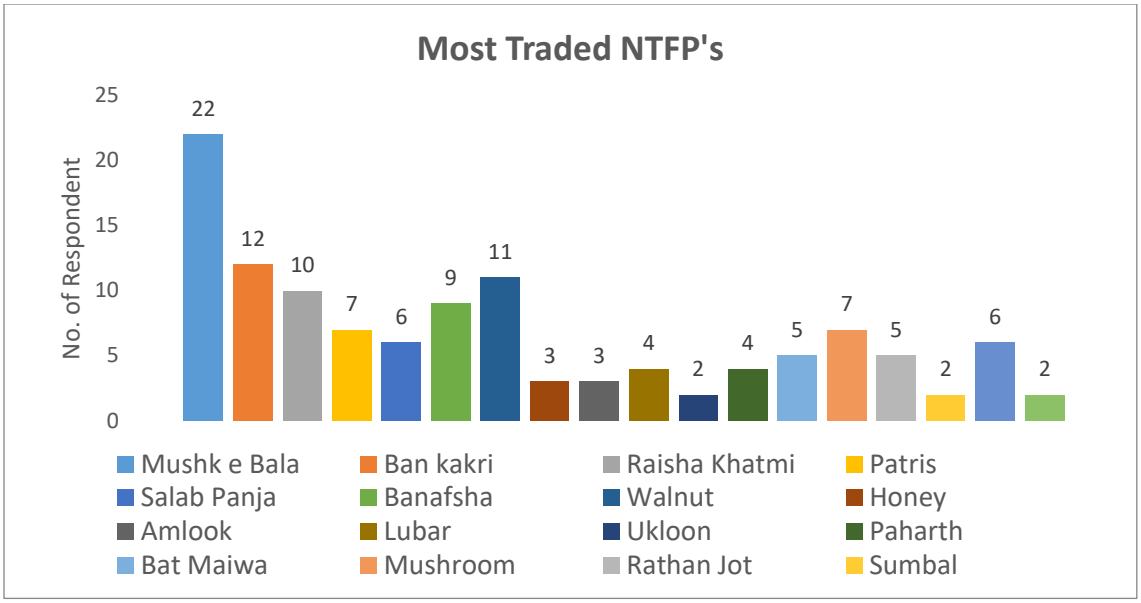


Table No.12: Showing NTFP's, their uses, collection method and selling price.

Main NTFP's	Scientific Name	Collection Method	Season of Collection	Parts Collected	Uses	Selling Price/kg
Mushk e bala	*Valeriana jatamansi*	By tool	Summer	Roots, leaves	Neurological, psychological and digestive disorders	500/kg
Ban kakri	*Podophyllum emodi*	By hand	Summer	Rhizome	Typhoid fever, blood cancer, hepatitis, diarrhea, kidney, liver and bladder problem	400/kg
Raisha Khatmi	*Lavateria cashmiriana*	By hand	Spring	Flower	Cough, diarrhea, gum's disease and hemorrhoids treatment	300/kg
Patris	*Aconitum heterophyllum*	By tool	Summer	Roots, stem, seeds	Abdominal disease, joint pain, headache, arthritis and skin disease	5000/kg
Salab Panja	*Dactylorhiza hatagirea*	By tool	Summer	Roots	Improve immunity, delaying ageing, reduce stress, and gastrointestinal problem	30000/kg
Banafsha	*Viola serpens*	By hand	Spring	Flower	Cough, bronchitis, tuberculosis, abdominal pain and insomnia	400/kg
Walnut	*Juglans regia*	By hand and tool	Summer	Fruit, bark	Strengthens bones, improves digestion, immunity, good for skin and hair loss	500/kg

Honey	-	traditional method	Spring	Honey	Anti-oxidant, wounds healing, diabetes, improves heart health and cough treatment	3000/kg
Amlook	*Diospyros lotus*	By hand	Summer	Fruit	Constipation, dysentery, hemorrhoids, asthma and lungs infections	100/kg
Lubar	*Phytolacca latbenia*	By tool	Summer	Roots	Arthritis, HIV AIDS, rheumatism and combating cancer	50/kg
Ukloon	*Viburnum grandiflorum*	By hand and tool	Spring	Flower, bark	Antispasmodic, anti-sedative, anti-inflammatory and protests liver	300/kg
Paharth	*Prunus cornuta*	By tool	Summer	Bark, fruit	Anti-cancer, heart disease, indigestion and intestinal diseases	400/kg
Bat Maiva	*Bergenia spp*	By tool	Summer	Rhizome, roots	Abdominal diseases, kidney and bladder stones, rabies, epilepsy and heart diseases	200/kg
Mushroom	*Agaricus bisporus*	By hand	Spring	Fruit	Anti-cancer, digestive diseases, high cholesterol, heart and liver diseases	600/kg
Ratan Jot	*Geranium rotundifoloim*	By hand	Summer	Rhizome, leaves	Anxiety, diarrhea, burns, indigestion, respiratory and kidney diseases	1500/kg
Sumbal	*Berberis lycium*	By hand	Summer	Fruit, leaves	Diabetes, stomachache, lung cancer and natural body tonic	200/kg
Salab Misri	*Orchis latifolia*	By tool	Summer	Tubers, leaves	Asthenospermia, sexual debility, spermatorrhea, anemia and stomach problem	25000/kg
Pear	*Pyrus pashia*	By hand	Summer	Fruit	Constipation, diarrhea, high cholesterol, piles, heart and kidney diseases	100/kg

DISCUSSION

(Shrestha, Shrestha and Shah, 2020) discussed that Nepal is rich in NTFP's and play an important part in improving rural income. Our study revealed that NTFPs are potential to fight poverty in kaghan valley. Businesses that focus on NTFP's have the potential to make a beneficial

contribution to the fight against poverty. In order to guarantee food security, lessen the severity of poverty, and improve the quality of people's livelihoods, it is vital to encourage the domestication and cultivation of NTFP's, as well as to develop the appropriate polices for harvesting. There is a requirement for coordinated efforts to be made to break down the barriers to the marketing and trade of NTFP's, as well as to support and allow individuals and communities to reap the benefits of NTFP's.

The local communities of kaghan valley mostly rely on forest based products for income generation. (Mukul *et al.*, 2016) noticed a strong correlation between poverty and forest dependence, and forests were more essential to those with lower incomes than those with higher incomes.

Unavailability of local markets is a major hindrance in commercial trade of NTFP's in Pakistan. (Belcher, Ruíz-Pérez and Achdiawan, 2005) discovered that even commercial NTFP manufacturers are poor or very poor in comparison to national averages.

Upon inquiring the respondents told us that previously Directorate of NTFP Peshawar had arranged a training course for the locals of Kaghan Valley in which the trainees were taught the importance of NTFP's. By using Affective sowing and extraction techniques they can alleviate their socio-economic status.

CONCLUSION AND RECOMMENDATION

CONCLUSION

The findings presented above make it abundantly clear that NTFP's play a significant part in reducing the severity of poverty in the Kaghan Valley. The vast majority of people were involved, either directly or indirectly, in the process of gathering, storing, and trading NTFP's. In addition to contributing to the growth of the economy and the alleviation of poverty, the Kaghan valley forest is home to a wide range of NTFP's, and it plays an important role in virtually every aspect of rural life in the area. These contributions include the provision of food, fodder, fuel, medicines, and building materials. However, because there isn't a particular market for the sale of NTFP's in the near vicinity, the economic returns aren't quite as high as they could be due to the high cost of

transporting the products. Many people who trade NTFP's have to pay high transport and duty fees, which has a negative impact on the economic outcomes of their trades. Their ability to maintain their way of life was severely affected by a severe absence of scientific knowledge as well as modern extraction tools.

RECOMMENDATIONS

- Providing suitable training in the necessary scientific knowledge and cutting-edge tool technology should be done so as to increase the long-term profitability of NTFP's.
- Modernizing NTFP production, processing, and marketing systems is recommended to capitalize on expanding domestic and international demand for NTFP's, which can boost rural lives and local economic and ecological welfare. Combining indigenous knowledge with modern science can give value to these items.
- In order to support and enable individuals and communities to receive greater benefits from the trade of NTFP's, the high duty that is imposed on the trading of NTFP's should be decreased. This would be done with the goal of increasing income from trading in NTFP's.
- The presence of specific local markets will promote a thriving trade in NTFP's, which will lead to an increase in income and the development of new employment prospects for the community.
- Given the growing demand for and profits from NTFPs, local communities should be encouraged to cultivate NTFP's on both private and community land. As a result, concerted efforts should be made to expand the cultivation of promising NTFP's in community and private lands.
- NTFP's face quality and price competition. Local processing can generate more jobs, better prices, and much less exploitation. Micro-enterprise development based on NTFP's can generate jobs and also encourage conservation.
- It is recommended that in order to improve the NTFP conservation efforts in the Kaghan Valley, additional NTFP staff members should be hired or further strengthened.
- It is recommended that a separate management plan should be prepared in addition updating the regulatory framework of NTFP's in order to improve the management of the NTFP's. This would be done in order to achieve the goal of improving the management of the NTFP's.

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